AMENDMENTS TO THE CLAIMS

Please cancel claims 15 to 17, without prejudice.

This listing of claims will replace all prior versions, and listing, of claims in the application.

1. (previously presented) A method for producing a protein suitable for X-ray crystallographic analysis, comprising

synthesizing a protein using a cell-free protein synthesis system comprising a cell extract, a nucleic acid coding for said protein, and amino acids for the substrate of said protein,

wherein said amino acids comprise at least one amino acid comprising a heavy atom, and wherein said amino acid comprising the heavy atom is introduced into the synthesized protein at an introduced rate of at least 80%, thereby rendering the protein suitable for x-ray crystallographic analysis.

2. (original) The method of claim 1, wherein said cell-free protein synthesis system consists essentially of an internal dialysate and an external dialysate through a dialysis membrane, wherein said internal dialysate comprises said cell extract and said nucleic acid coding for said protein, and wherein said amino acids for substrates of said protein comprising said internal dialysate and/or said external dialysate.

3. (original) The method of claim 1, wherein said cell extract is an extract of *Escherichia coli*, thermophilic bacteria or yeast.

4. (original) The method of claim 3, wherein said cell extract is a concentrated extract of *Escherichia coli* S30 cell extract fraction.

5. (original) The method of claim 2, wherein said external dialysate further comprises an ATP regenerating system, a high-molecular weight absorbent and a reducing agent, and wherein

said external dialysate is exchanged for a fresh dialysate when the rate of protein synthesis is reduced.

6. (previously presented) The method of claim 2, wherein the fractional molecular weight of said dialysis membrane ranges from 10,000 Da to 100,000 Da.

7. (previously presented) The method of claim 1, wherein said cell-free protein synthesis system further comprises a combination of creatine kinase and creatine phosphate as an adenosine triphosphate regenerating system.

8. (original) The method of claim 1, wherein said heavy atom is any one selected from the group consisting of mercury, platinum, iodine, iron and selenium.

9. (previously presented) The method of claim 1, wherein said amino acid comprising the heavy atom is selenomethionine or selenocysteine.

10. (previously presented) The method of claim 2, wherein said amino acid comprising the heavy atom is selenomethionine or selenocysteine.

11. (previously presented) The method of claim 3, wherein said amino acid comprising the heavy atom is selenomethionine or selenocysteine.

12. (previously presented) The method of claim 4, wherein said amino acid comprising the heavy atom is selenomethionine or selenocysteine.

13. (original) The method of claim 1, wherein said introduced rate of said amino acid comprising the heavy atom is at least 95%.

14. (original) The method of claim 9, wherein said introduced rate of said amino acid comprising the heavy atom is at least 95%.

15-17. (canceled)